

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow. Claims 18, 20, 22-24, 27-31, 33-34, 39-41, and 44-45 are currently pending in this application.

Claim Rejections – 35 U.S.C. § 103

On page 2 of the Office Action, claims 18, 20, 22-24, 27-31, 33, 34, 40, 41, 44 and 45 were rejected under 35 U.S.C. 103(a) as being unpatentable over International Publication No. WO 00/41378 (“Atkinson”) in view of U.S. Patent No. 5,952,992 (“Helms”). On page 11 of the Office Action, claim 39 was rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson in view of Helms and further in view of U.S. Patent No. 5,828,056 (“Alderman”). These rejections should be withdrawn for at least those reasons presented below.

Claims 18, 20, 22-24, 28, and 39-41

Independent claim 18 recites a combination including, among other limitations,

a plurality of input buttons in fixed positions relative to the display;

...

a plurality of light sensors configured to convert ambient light into signals to be received by the computing electronics;

...

wherein the computing electronics are configured to *adjust a brightness behind the plurality of input buttons based on signals from at least one of the plurality of light sensors.*

Thus, claim 1 provides for a plurality of light sensors, and computing electronics that are configured to adjust the brightness behind a plurality of input buttons based on signals from the light sensors. In the Office Action, the Examiner acknowledged that “Atkinson et al. discloses a single light detector, Atkinson et al. does not explicitly disclose utilizing a plurality of light detectors.” Office Action at p. 3. However, the Examiner stated that

Helms discloses a method and apparatus for automatically adjusting the brightness of an LCD based upon ambient lighting conditions in which a laptop (handheld) computer is used (see col. 2, lines 3-6, 8-18 and Figure 1). Helms discloses computing a weighted average of measured signals obtained by photodetectors (one on the front surface and another on the back surface of the display lid, see Figure 4).

Office Action at p. 3. The Examiner concluded that

It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the automatic brightness controlling techniques of Helms with the user interface illumination techniques of Atkinson et al. in order to provide the computing electronics with a better representation of ambient light levels directed toward the device by supplying the electronics with multiple samples derived from the multiple sensors, thus the multiple samples providing more light detection at or around the device than using only one reading from one sensor. Such is particularly useful in situations in which light is directed towards the back of the LCD, hence toward the user's eyes, which light, while affecting the visibility of the LCD, might not be detected by the first photodetector (see column 2, lines 32-36 of Helms).

Office Action at p. 4. Applicants respectfully traverse the rejection, and submit that it would not have been obvious to one of skill in the art to modify the teachings of Atkinson with the teachings of Helms to arrive at the subject matter of claim 1 because, as discussed below, the references teach away from their combination: "It is improper to combine references when the references teach away from their combination." MPEP § 2145(X)(D)(2) (citing *In re Graselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983)). Further, the teachings of Atkinson and Helms are not sufficient to render the claims *prima facie* obvious because, as also discussed below, the proposed modification of Atkinson with the teachings of Helms would change the principle of operation of the invention in Atkinson: "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." MPEP § 2143.01(VI) (citing *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)).

Atkinson discloses a “backlight for a portable device” where a photosensor is used to detect the light incident on a user interface, and the illumination of the user interface is controlled based on the detected light. Atkinson, p. 1, lines 16-27. Throughout the disclosure of Atkinson, the importance of locating the photosensor under the display so that the photosensor can detect both ambient light and light from the display illuminator is stressed. For example, pages 1-2 of Atkinson discuss various benefits and advantages of locating the photosensor under the display:

Preferably, the photosensor is placed under the border area of a display where it receives not only ambient light but also some light scattered by the diffuser used to distribute light from the illuminator evenly across the display. This location of the sensor gives the following benefits:

1. The sensor is least likely to be obscured by a user, being in an area viewed by the user[, . . .] *other locations are likely to suffer from light being obscured by the user's hand* with consequential annoying illumination level fluctuations and reduced operating times.
2. Backlighting is primarily needed for display illumination therefore *positioning the photosensor under the display is the prime location where ambient light received by the sensor represents the true ambient light level illuminating the display.*
3. Integration of backlight brightness control into the light sensitivity control giving the user a single up/down illumination level is possible if the sensor is positioned such that it receives a light level that represents the total light contributing to display illumination which is the sum of both backlight and ambient light. *The best location where this is possible is behind the display.*

Atkinson at p. 1, line 31 to p. 2, line 22. Other portions of Atkinson include similar discussions of the importance of locating the photosensor (i.e., light detector) under the display, including, among other places, the Abstract (“Preferably the light detector is positioned to detect light incident on the device, which light is the sum of ambient light and light from the illuminator”), page 3, lines 12-14 (“Having the light detector located to receive both the ambient light and the light from the illuminator means that the illuminator can be used to calibrate the

light detector”), and page 10, lines 8-10 (“The phototransistor 91 is placed under the border area 802 of the display where it receives not only ambient light but also some of the light from LEDs 15 which enters the diffuser 81 by means of apertures 88”). Thus, Atkinson stresses the importance of utilizing a photosensor that is located beneath the display so that both ambient light and light from the display illuminator may be detected.

In contrast, Helms discloses a portable PC 10’ where a first photodetector 14’ is provided on the same side of the lid of PC 10’ as an LCD 12’, and a second photodetector 410 is provided on the opposite side of the lid of PC 10’ as an LCD 12’. See, e.g., col. 4, lines 41-51 and Figure 4. As stated in Helms, photodetector 410 is “for detecting ambient light directed toward the backside of the LCD 12’ and toward a user’s eyes.” Helms, col. 4, lines 49-51. Helms goes on to state that with this configuration, “the user is insured that the contents of the LCD 12’ will be visible where, for example, the area behind the LCD 12’ is highly illuminated, but the area in front of LCD 12’ is not. This might not be the case absent the second photodetector 410.” Helms, col. 4, lines 59-63. Thus, Helms teaches the advantages of positioning a second photodetector on the opposite side of a laptop lid from the display. Applicants submit that photodetector 410, being located on the back side of the laptop lid, would not detect the light incident on the display or light from any illuminator used in conjunction with LCD 12’.

As illustrated by the above-cited portions of Atkinson and Helms, the teachings of the references teach away from their combination because Atkinson stresses the many benefits and advantages of locating a light detector under a display, where both ambient light and light from the display illuminator may be detected, while Helms teaches utilizing a second photodetector on an opposite side of a laptop lid from the display, where the photodetector would not detect any of the light from the display illuminator or the actual ambient light incident on the display.

Further, to modify the portable device of Atkinson with the teachings of Helms would change the principle of operation of the portable device of Atkinson. For example, a second light detector provided on the rear side of the portable device of Atkinson (based on modifying Atkinson in view of the teachings of Helms) would likely detect a very different light level than

that desired in Atkinson, and would not permit the portable device of Atkinson to operate as intended (i.e., to control brightness based on ambient light incident on the display and light from the display illuminator).

Accordingly, in view of the above remarks, Applicants submit that the subject matter of claim 18 would not have been obvious in view of the teachings of Atkinson and Helms. Withdrawal of the rejection of independent claim 18, and corresponding dependent claims 20, 22-24, 27-28, and 39-41, be withdrawn.

Dependent claim 24 is believed to be further patentable over the cited references. Claim 24 depends from independent claim 18 and recites

wherein the plurality of light sensors are coupled to a back surface of the housing.

Atkinson, the primary reference relied on by the Examiner, teaches away from the subject matter of claim 24, by stressing the many benefits and advantages of locating the light detector under the display, as discussed above, rather than coupling light sensors to a back surface of a housing, as in claim 24. Thus, claim 24 is believed to be further patentable over the cited references.

In rejecting dependent claim 39 the Examiner further relied on Alderman. However, Alderman does not cure the deficiencies of Atkinson and Helms with respect to independent claim, from which claim 39 depends, because Alderman discloses the use of only a single photodetector.

Claims 29-31, 33-34, and 44-45

Independent claim 29 recites a combination including, among other limitations,

a plurality of input buttons in fixed positions relative to the display;

. . .

a first light sensor configured to convert light into signals to be received by the computing electronics, wherein the computing electronics are configured to adjust a characteristic of the handheld computer based on signals from the first light sensor;

...

further comprising a second light sensor configured to convert light into signals to be received by the computing electronics, wherein the computing electronics are configured to adjust at least one other characteristic of the handheld computer based on signals from the second light sensor.

Independent claim 29 is believed to be patentable over the cited references for the same reasons that independent claim 18 is patentable. Withdrawal of the rejection of independent claim 29, and corresponding dependent claims 30-31, 33-34, and 44-45, is respectfully requested.

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Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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